Proposed Addition to Appendix 2

These propose paragraphs would preceed the discussion of the test method in Appendix 2.

## A2.0 Importance of Larval Testing

It may be argued that the loss of a newly emerged bee (day 1) or a capped larvae is of greater proportional effect on the colony than the loss of a mature forager. This is because a mature forager has about a 40-day life span during which it contributes to the colony. Therefore, loss of a 20-day old forager might be considered less of a loss to the colony than the loss of a newly emerged, or developing pupae, which maintain their full potential to contribute to the colony. Further, larvae that die later in development (*e.g.*, at day 7 verses day 1) have consumed more of the colony energy, as input into its development, but have not provided any input back into the colony since they have no become part of the work force of the colony.

Besides the energetic cost to the colony from losing either larvae or newly emerged bees, there will also be impact on the colony strength. Removing half of larvae, for example, will have a potentially significant impact to the colony because not enough workers will be present to build a strong colony, make honey, and survive the winter. Investigating how the impact of removing varying amounts of larvae translates to colony increase/decreases may be an appropriate exercise for modeling, such as with the Beepop model.

## A2.1 Proposed Elements for a Larval Study

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